ENVIRONMENTAL RESOLUTIONS, INC.

April 15, 2005

Mr. Noman Chowdhury
California Regional Water Quality Control Board
Los Angeles Region
320 West 4th Street, Suite 200
Los Angeles, California 90013

Subject: **Quarterly Report for the First Quarter 2005**
Mobil Station 18MLJ
5005 North Long Beach Boulevard
Long Beach, California
CRWQCB Case No. 908050452A

Mr. Chowdhury:

At the request of ExxonMobil Oil Corporation (ExxonMobil), formerly Exxon Company, U.S.A., Environmental Resolutions, Inc. is submitting the First Quarter 2005 ExxonMobil Quarterly Report for the above-referenced site. The format utilized for the report consolidates groundwater sampling (where applicable), Title 23, Subchapter 16 reporting and consultant progress updates for ExxonMobil into one summary report.

Please call me at (949) 457-8954 if you have any questions.

Sincerely,
Environmental Resolutions, Inc.

George E. Salley

George E. Salley
Senior Project Geologist
P.G. 6308

Cc: Ms. Marla D. Guensler, ExxonMobil
Ms. Carmen Piro, Long Beach Department of Health and Human Services

20372 North Sea Circle, Lake Forest, California 92630-8806 949-457-8950 (FAX 457-8956)

Lake Forest • Novato • Seattle

3163
EXNQTRLY
Date: April 15, 2005

EXXONMOBIL OIL CORPORATION (EXXONMOBIL)
QUARTERLY REPORT

Site Status: Active Mobil Station

Station Number: 18MLJ Address:	5005 North Long Beach Boulevard, Long Beach, CA
ExxonMobil Environmental Engineer:	Ms. Marla D. Guensler
Consulting Company/Contact Person:	Environmental Resolutions, Inc. (ERI)/George E. Salley
Primary Agency:	Mr. Noman Chowdhury, California Regional Water Quality Control Board - Los Angeles Region (CRWQCB) 320 West 4th Street, Suite 200, Los Angeles, CA 90013
Other Agencies to Receive Copies:	Ms. Carmen Piro Long Beach Department of Health and Human Services 2525 Grand Avenue, Long Beach, CA 90815

WORK PERFORMED THIS QUARTER [First - 2005]:

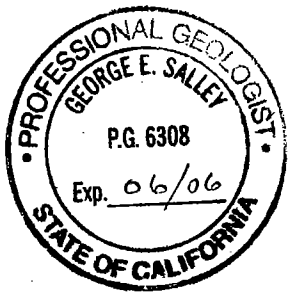
- 01/14/05 – Submitted the quarterly report for the fourth quarter 2004.
- 02/25/05 – ERI received a copy of the CRWQCB letter approving the site assessment to install three off-site groundwater monitoring wells. The letter was sent to ExxonMobil and was dated 11/30/04. The approval letter also mandated the installation of one additional groundwater monitoring well in the northeastern portion of the site.
- 03/04/05 – ExxonMobil submitted an interim remedial action plan (IRAP), prepared by ERI, for an air sparge/soil vapor extraction (AS/SVE) feasibility study to be conducted at the site. The IRAP included the details associated with the drilling and construction of four AS/SVE wells to be utilized during the feasibility study.
- 03/16/05 – ERI, on behalf of ExxonMobil, directed the drilling and sampling of soil boring B7, in accordance with the CRWQCB requirement. The soil boring was completed as groundwater monitoring well MW7. During this investigation, groundwater was encountered at approximately 30 feet below ground surface (bgs). The groundwater monitoring well was completed to a total depth of 51.5 feet bgs, and with a 30-foot screened interval.
- 03/21/05 – Performed quarterly purge groundwater monitoring and sampling. Properly recycled purge water at Crosby & Overton of Long Beach, California, under a non-hazardous waste manifest. The manifest will be included with the second quarter 2005 quarterly report.

WORK PROPOSED FOR NEXT QUARTER [Second - 2005]:

- Perform quarterly purge groundwater monitoring and sampling.
- Submit a quarterly report.
- Conduct the AS/SVE feasibility study as presented in the IRAP.

Current Phase of Project:	Monitoring and sampling
Frequency of Monitoring and Sampling:	Quarterly
Is LPH Present on Site:	No
Cumulative LPH Recovered to Date:	None
Water Wells or Surface Waters within 1000' & Their Respective Directions:	None
Permits for Discharge:	NA
Current Remediation Techniques:	None
Depth to Groundwater:	27 to 29 feet bgs – measured on 03/21/05

Please call Mr. George E. Salley at (949) 457-8954 for any questions regarding this report.



Respectfully Submitted,
Environmental Resolutions, Inc.

George E. Salley

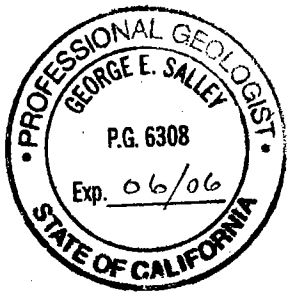
George E. Salley
Senior Project Geologist
P.G. 6308

ATTACHED:

- Site Location Map (Plate 1)
- Groundwater Contour Map – 03/21/05 (Plate 2)
- Groundwater Sample Analyses Map – 03/21/05 (Plate 3)
- Cumulative Water Level Measurements and Groundwater Analyses (Table 1)
- Laboratory Report and Chain-of-Custody Record
- Purging and Sampling Records
- Purging and Sampling Protocol

Current Phase of Project:	Monitoring and sampling
Frequency of Monitoring and Sampling:	Quarterly
Is LPH Present on Site:	No
Cumulative LPH Recovered to Date:	None
Water Wells or Surface Waters within 1000' & Their Respective Directions:	None
Permits for Discharge:	NA
Current Remediation Techniques:	None
Depth to Groundwater:	27 to 29 feet bgs – measured on 03/21/05

Please call Mr. George E. Salley at (949) 457-8954 for any questions regarding this report.



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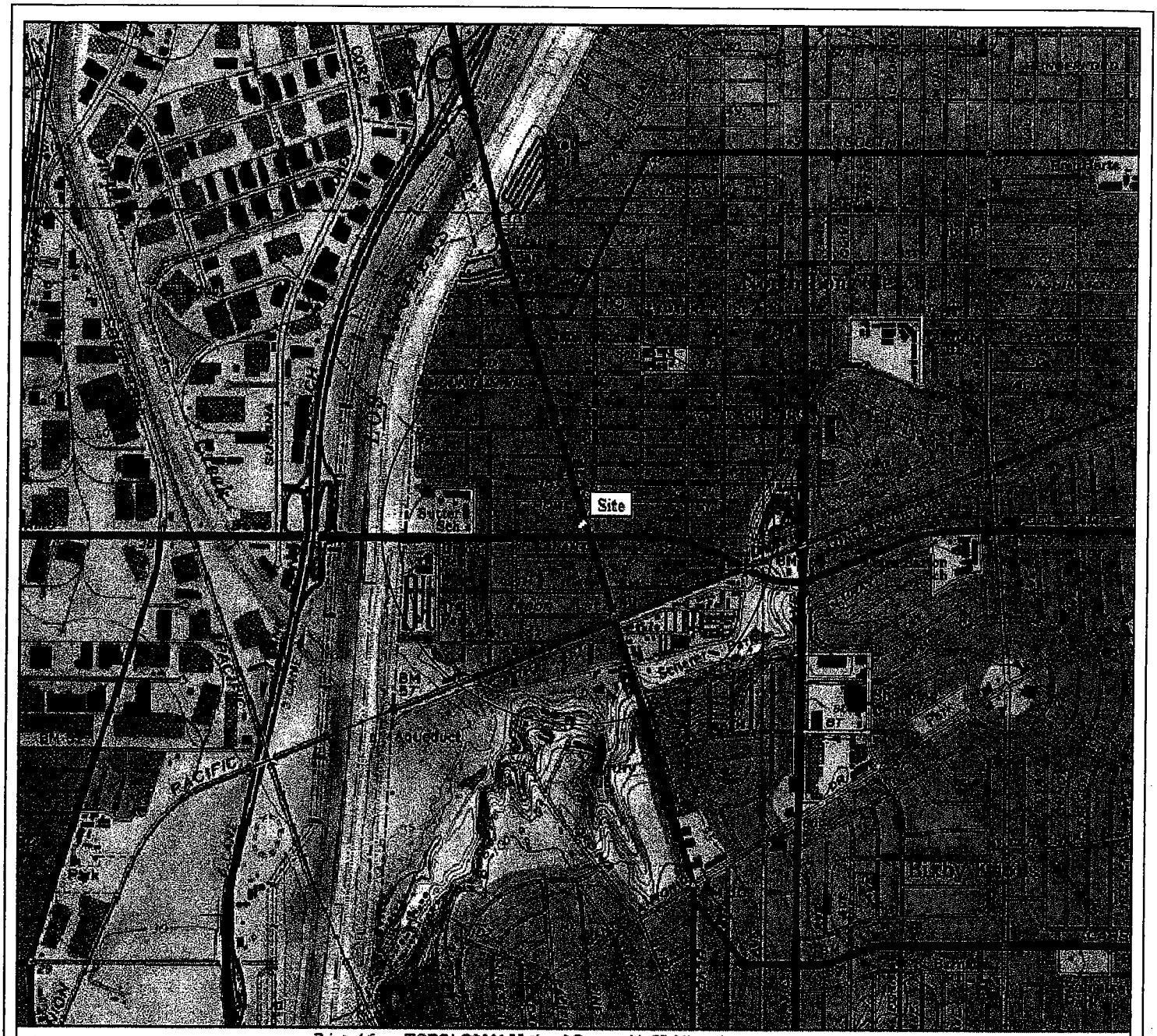


FN 3163TOPO

EXPLANATION

1/2-mile radius circle

N

APPROXIMATE SCALE

0 0.5 1 mile

SOURCE:
Modified from a map
provided by
National Geographic's TOPO!

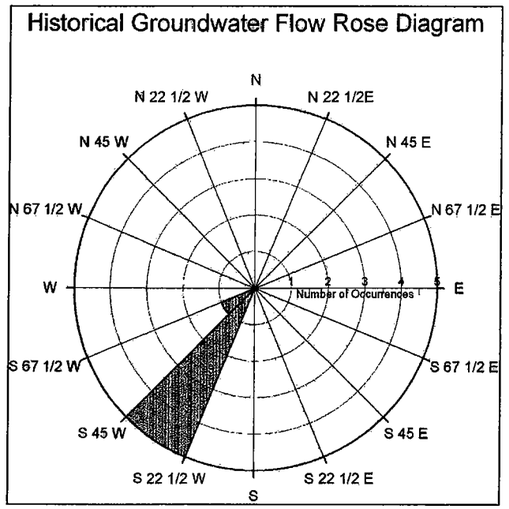
ERI ENVIRONMENTAL RESOLUTIONS, INC

SITE LOCATION MAP

MOBIL STATION 18MLJ
5005 North Long Beach Boulevard
Long Beach, California

PROJECT NO. 3163

PLATE 1



EXPLANATION

- B7/MW7 — Groundwater monitoring well
- B3/MW3 — Groundwater monitoring/vadose zone well
- 12.05 — Groundwater elevation (feet, relative to mean sea level)
- Line of equal groundwater elevation
- Underground storage tank

N

APPROXIMATE SCALE

0 40 80 FEET

GROUNDWATER CONTOUR MAP 03/21/05

MOBIL STATION 18MLJ
5005 North Long Beach Boulevard
Long Beach, California

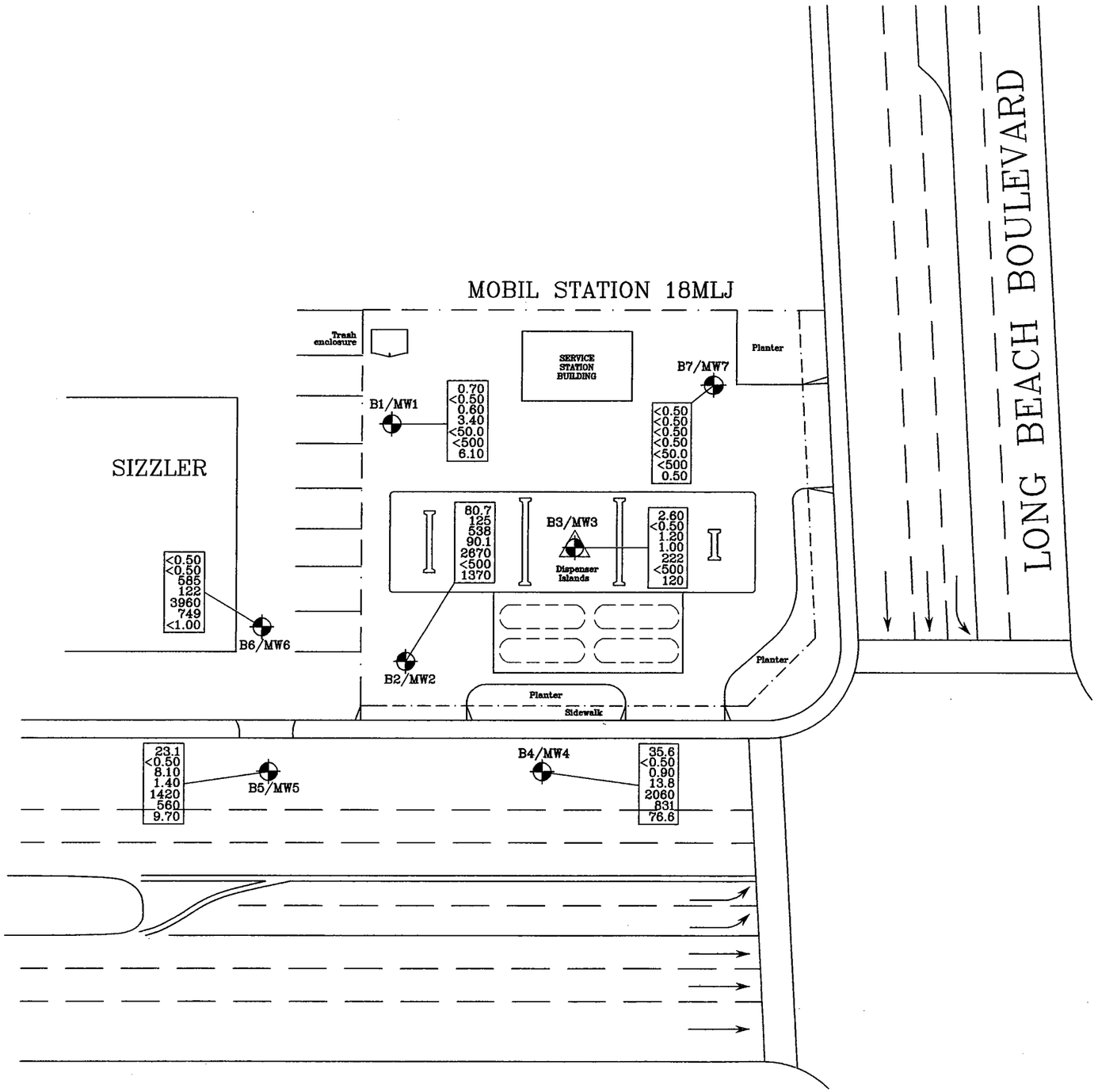
FN 31630004

ERI ENVIRONMENTAL RESOLUTIONS, INC.

PROJECT NO. 3163

PLATE 2

DATE: 04/11/05



EXPLANATION

- B7/MW7 — Groundwater monitoring well
- B3/MW3 — Groundwater monitoring/vadose zone well
- Underground storage tank

<1	Benzene concentration in ug/l
<1	Toluene concentration in ug/l
<1	Ethylbenzene concentration in ug/l
<1	Total xylenes concentration in ug/l
<50	Total petroleum hydrocarbons as gasoline concentration in ug/l
<500	Total petroleum hydrocarbons as diesel concentration in ug/l
<2	Methyl tertiary butyl ether concentration in ug/l
<500	Less than the stated laboratory reporting limit
ug/l	Micrograms per liter

N

APPROXIMATE SCALE

0 40 80 FEET

GROUNDWATER SAMPLE ANALYSES MAP 03/21/05

MOBIL STATION 18MLJ
5005 North Long Beach Boulevard
Long Beach, California

FN 31630004

ERI ENVIRONMENTAL RESOLUTIONS, INC.

PROJECT NO. 3163

PLATE 3

DATE: 04/11/05

TABLE 1

CUMULATIVE WATER LEVEL MEASUREMENTS AND GROUNDWATER ANALYSES

MOBIL STATION 18MLJ

5005 NORTH LONG BEACH BOULEVARD

LONG BEACH, CALIFORNIA

ERI 3163

Date	Well Elev	GW Depth	GW Elev	LPH	Benzene (ug/l)	Toluene (ug/l)	Ethyl-benzene (ug/l)	Xylenes (ug/l)	TPHg (ug/l)	TPHd (ug/l)	TRPH (ug/l)	MTBE (ug/l)	DIPE (ug/l)	ETBE (ug/l)	TAME (ug/l)	TBA (ug/l)	Ethanol (ug/l)	Methanol (ug/l)
Field Point	MW1																	
4/17/2003	41.10	29.66	11.44	no	<1.00	<1.00	<1.00	<1.00	230	133	<100	<2.00	<1.00	<1.00	<1.00	<10.0	<1000	<10000
8/26/2003	41.10	29.52	11.58	no	<1.00	<1.00	<1.00	<1.00	97.4	<500		<2.00	<1.00	<1.00	<1.00	<10.0	<1000	<10000
11/14/2003	41.10	29.88	11.22	no	<1.00	<1.00	<1.00	<1.00	<50.0	<500		<2.00	<1.00	<1.00	<1.00	<10.0		
2/21/2004	41.10	30.03	11.07	no	<1.00	<1.00	<1.00	<1.00	<50.0	<500		<2.00	<1.00	<1.00	<1.00	<10.0	<1000	<10000
4/30/2004	41.10	29.85	11.25	no	<1.00	<1.00	<1.00	<1.00	<50.0	<500		<2.00	<1.00	<1.00	<1.00	69.0		
7/10/2004	41.10	30.50	10.60	no	<1.00	<1.00	<1.00	<1.00	231	<500		2.90	<1.00	<1.00	<1.00	<10.0		
11/5/2004	41.10	30.52	10.58	no	<1.00	<1.00	<1.00	<1.00	<50.0	<500		<2.00	<1.00	<1.00	<1.00	<10.0		
3/21/2005	41.10	29.21	11.89	no	0.70	<0.50	0.60	3.40	<50.0	<500		6.10	<1.00	<1.00	1.00	17.0	<200	<5000
Field Point	MW2																	
4/17/2003	39.55	28.43	11.12	no	5.90	3660	1340	3940	19900	2980	<100	131	<1.00	<1.00	<1.00	<10.0	<1000	<10000
8/26/2003	39.55	28.31	11.24	no	118	1220	1260	625	15600	1490		5200	<1.00	<1.00	5.70	85.1	<1000	<10000
11/14/2003	39.55	28.66	10.89	no	68.0	1280	1280	770	9810	1110		4260	<1.00	<1.00	<1.00	142		
2/21/2004	39.55	28.82	10.73	no	47.1	560	1220	775	10600	1710		975	<1.00	<1.00	<1.00	56.5	<1000	<10000
4/30/2004	39.55	28.62	10.93	no	61.0	424	1390	550	9090	872		1040	<1.00	<1.00	<1.00	<10.0		
7/10/2004	39.55	29.34	10.21	no	60.4	348	1260	402	8260	1220		920	<1.00	<1.00	<1.00	125		
11/5/2004	39.55	29.31	10.24	no	66.7	238	930	190	6360	878		220	<1.00	<1.00	<1.00	<10.0		
3/21/2005	39.55	27.96	11.59	no	80.7	125	538	90.1	2670	<500		1370	<1.00	0.60 J	0.70 J	522	<200	<5000
Field Point	MW3																	
4/17/2003	40.84	29.34	11.50	no	<1.00	<1.00	1.50	7.70	2530	916	<100	105	<1.00	<1.00	<1.00	45.4	<1000	<10000
8/26/2003	40.84	29.26	11.58	no	<1.00	<1.00	1.60	<1.00	162	<500		112	<1.00	<1.00	<1.00	<10.0	<1000	<10000

TABLE 1

CUMULATIVE WATER LEVEL MEASUREMENTS AND GROUNDWATER ANALYSES

MOBIL STATION 18MLJ

5005 NORTH LONG BEACH BOULEVARD

LONG BEACH, CALIFORNIA

ERI 3163

Date	Well Elev	GW Depth	GW Elev	LPH	Benzene (ug/l)	Toluene (ug/l)	Ethyl-benzene (ug/l)	Xylenes (ug/l)	TPHg (ug/l)	TPHd (ug/l)	TRPH (ug/l)	MTBE (ug/l)	DIPE (ug/l)	ETBE (ug/l)	TAME (ug/l)	TBA (ug/l)	Ethanol (ug/l)	Methanol (ug/l)
11/14/2003	40.84	29.57	11.27	no	<1.00	<1.00	2.40	<1.00	179	<500		87.2	<1.00	<1.00	<1.00	<10.0		
2/21/2004	40.84	29.73	11.11	no	1.20	<1.00	2.30	<1.00	170	<500		116	<1.00	<1.00	<1.00	<10.0	<1000	<10000
4/30/2004	40.84	29.57	11.27	no	<1.00	<1.00	2.00	6.40	138	<500		137	<1.00	<1.00	<1.00	<10.0		
7/10/2004	40.84	30.31	10.53	no	<1.00	<1.00	2.80	<1.00	139	<500		89.6	<1.00	<1.00	<1.00	<10.0		
11/5/2004	40.84	30.25	10.59	no	1.50	<1.00	4.30	<1.00	181	<500		182	<1.00	<1.00	<1.00	50.3		
3/21/2005	40.84	28.88	11.96	no	2.60	<0.50	1.20	1.00	222	<500		120	<1.00	<1.00	<1.00	97.4	<200	<5000
Field Point	**MW4**																	
11/5/2004	39.10	30.85	8.25	no	23.7	<1.00	<1.00	<1.00	247	<500		27.1	<1.00	<1.00	<1.00	5760		
3/21/2005	39.10	27.51	11.59	no	35.6	<0.50	0.90	13.8	2060	831		76.6	<1.00	1.20	1.10	49700	<200	1800 J
Field Point	**MW5**																	
11/5/2004	38.72	28.74	9.98	no	<1.00	119	280	900	6520	1330		<2.00	<1.00	<1.00	<1.00	<10.0		
3/21/2005	38.72	27.39	11.33	no	23.1	<0.50	8.10	1.40	1420	560		9.70	<1.00	<1.00	<1.00	5250	<200	<5000
Field Point	**MW6**																	
11/5/2004	39.21	29.11	10.10	no	3.50	5.00	1120	404	8090	1580		<2.00	<1.00	<1.00	<1.00	<10.0		
3/21/2005	39.21	27.76	11.45	no	<0.50	<0.50	585	122	3960	749		<1.00	<1.00	<1.00	<1.00	<50.0	<200	1200 J
Field Point	**MW7**																	
3/21/2005	41.14	29.09	12.05	no	<0.50	<0.50	<0.50	<0.50	<50.0	<500		0.50 J	<1.00	<1.00	<1.00	4.70 J	<200	<5000
Field Point	**Trip Blank**																	
4/17/2003				no	<1.00	<1.00	<1.00	<1.00	<50.0			<2.00	<1.00	<1.00	<1.00	<10.0	<1000	<10000
8/26/2003				no	<1.00	<1.00	<1.00	<1.00	<50.0			<2.00	<1.00	<1.00	<1.00	<10.0		
11/14/2003				no	<1.00	<1.00	<1.00	<1.00	<50.0			<2.00	<1.00	<1.00	<1.00	<10.0		
2/21/2004				no	<1.00	<1.00	<1.00	<1.00	<50.0			<2.00	<1.00	<1.00	<1.00	<10.0		

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MOBIL STATION 18MLJ

5005 NORTH LONG BEACH BOULEVARD

LONG BEACH, CALIFORNIA

ERI 3163

Date	Well Elev	GW Depth	GW Elev	LPH	Benzene (ug/l)	Toluene (ug/l)	Ethyl-benzene (ug/l)	Xylenes (ug/l)	TPHg (ug/l)	TPHd (ug/l)	TRPH (ug/l)	MTBE (ug/l)	DIPE (ug/l)	ETBE (ug/l)	TAME (ug/l)	TBA (ug/l)	Ethanol (ug/l)	Methanol (ug/l)
4/30/2004				no	<1.00	1.00	<1.00	<1.00	<50.0			<2.00	<1.00	<1.00	<1.00	<10.0		
7/10/2004				no	<1.00	<1.00	<1.00	<1.00	50.0			<2.00	<1.00	<1.00	<1.00	<10.0		
11/5/2004				no	<1.00	<1.00	<1.00	<1.00	<50.0			<2.00	<1.00	<1.00	<1.00	<10.0		
3/21/2005				no	<0.50	<0.50	<0.50	<0.50	<50.0			<1.00	<1.00	<1.00	<1.00	<10.0		

TABLE 1

CUMULATIVE WATER LEVEL MEASUREMENTS AND GROUNDWATER ANALYSES

MOBIL STATION 18MLJ

5005 NORTH LONG BEACH BOULEVARD

LONG BEACH, CALIFORNIA

ERI 3163

Explanation:
ELEV = elevation
EPA = Environmental Protection Agency
GW = groundwater
DIPE = di-isopropyl ether
ETBE = ethyl tertiary butyl ether
TAME = tertiary amyl methyl ether
TBA = tertiary butyl alcohol
TPHd = total petroleum hydrocarbons as diesel
TPHg = total petroleum hydrocarbons as gasoline
TRPH = total recoverable petroleum hydrocarbons
MTBE = methyl tertiary butyl ether
MTBE analyzed by EPA Method 8260B.
LPH = liquid phase hydrocarbons (thickness measured in feet)
J = estimated value between method detection limit and practical quantification limit
<10000 = not detected at or above stated laboratory reporting limit
ug/l = micrograms per liter

TestAmerica
ANALYTICAL TESTING CORPORATION

2960 Foster Creighton Drive • Nashville, Tennessee 37204
800-765-0980 • 615-726-3404 Fax

4/11/05

ENVIRONMENTAL RESOLUTIONS, INC 10203
GEORGE SALLEY
20372 NORTH SEA CIRCLE
LAKE FOREST, CA 92630

This report includes the analytical certificates of analysis for all samples listed below. These samples relate to your project identified below:

Project Name: EXXONMOBIL 18-MLJ
Project Number: ERI 3163 13.
Laboratory Project Number: 410354.

An executed copy of the chain of custody, the project quality control data, and the sample receipt form are also included as an addendum to this report. Any QC recoveries outside laboratory control limits are flagged individually with an #. Sample specific comments and quality control statements are included in the Laboratory notes section of the analytical report for each sample report. If you have any questions relating to this analytical report, please contact your Laboratory Project Manager at 1-800-765-0980. Any opinions, if expressed, are outside the scope of the Laboratory's accredidation.

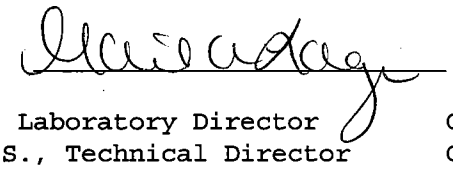
Sample Identification	Lab Number	Collection Date
W-29-MW7	05-A41294	3/21/05
W-29-MW1	05-A41295	3/21/05
W-28-MW3	05-A41296	3/21/05
W-27-MW4	05-A41297	3/21/05
W-27-MW2	05-A41298	3/21/05
W-27-MW5	05-A41299	3/21/05
W-27-MW6	05-A41300	3/21/05
TRIP BLANKS	05-A41301	3/21/05

TestAmerica
ANALYTICAL TESTING CORPORATION

2960 Foster Creighton Drive • Nashville, Tennessee 37204
800-765-0980 • 615-726-3404 Fax

Sample Identification	Lab Number	Collection Date

These results relate only to the items tested.
This report shall not be reproduced except in full and with permission of the laboratory.

Report Approved By:  Report Date: 4/ 1/05

Johnny A. Mitchell, Laboratory Director
Michael H. Dunn, M.S., Technical Director
Pamela A. Langford, Senior Project Manager
Eric S. Smith, QA/QC Director
Gail A. Lage, Senior Project Manager
Glenn L. Norton, Technical Services
Kelly S. Comstock, Technical Services
Roxanne L. Connor, Senior Project Manager

Laboratory Certification Number: 01168CA

TestAmerica
ANALYTICAL TESTING CORPORATION

2960 Foster Creighton Drive • Nashville, Tennessee 37204
800-765-0980 • 615-726-3404 Fax

ANALYTICAL REPORT

ENVIRONMENTAL RESOLUTIONS, INC 10203
GEORGE SALLEY
20372 NORTH SEA CIRCLE
LAKE FOREST, CA 92630

Lab Number: 05-A41294
Sample ID: W-29-MW7
Sample Type: Water
Site ID: 18-MLJ

Date Collected: 3/21/05
Time Collected: 14:40
Date Received: 3/23/05
Time Received: 7:50

Project: ERI 3163 13
Project Name: EXXONMOBIL 18-MLJ
Sampler: JAMES CAVERS

Purchase Order: 4506125986

Parameter	Result	Flag	Units	Limit of Quantitation	Limit of Detection	Dilution Factor	Date	Time	Method	Analyst	Batch
**Volatile Organics											
**Ethyl-t-butylether	<1.00		ug/l	1.00	0.27	1.	3/25/05	14:56	8260B	S. Edwards	2734
**tert-amyl methyl ether	<1.00		ug/L	1.00	0.30	1.	3/25/05	14:56	8260B	S. Edwards	2734
**Tertiary butyl alcohol	4.70	J	ug/l	10.0	4.28	1.0	3/25/05	14:56	8260B	S. Edwards	2734
**Benzene	<0.50		ug/l	0.50	0.25	1.	3/25/05	14:56	8260B	S. Edwards	2734
**Ethylbenzene	<0.50		ug/l	0.50	0.19	1.	3/25/05	14:56	8260B	S. Edwards	2734
**Toluene	<0.50		ug/l	0.50	0.17	1.	3/25/05	14:56	8260B	S. Edwards	2734
**Xylenes (Total)	<0.50		ug/l	0.50	0.33	1.	3/25/05	14:56	8260B	S. Edwards	2734
**Methyl-t-butyl ether	0.50	J	ug/l	1.00	0.23	1.0	3/25/05	14:56	8260B	S. Edwards	2734
Ethanol	<200.		ug/L	200.	30.7	1.	3/25/05	14:56	8260B	S. Edwards	2734
**Diisopropyl ether	<1.00		ug/l	1.00	0.18	1.	3/25/05	14:56	8260/SA05-77	S. Edwards	2734
**Methanol	<5000		ug/l	5000	160	1.	3/30/05	13:49	8015B	K. Roberso	2765
**TPH-GC											
**TPH (Gasoline Range)	<50.0		ug/l	50.0	33.0	1.	3/29/05	20:15	CA-LUFT	A. Cobbs	4812
**TPH (Diesel Range,C13-C22)	<500.		ug/l	500.	33.	1.	3/30/05	11:05	8015B/CA-LUFTB	Yanna	4925

Sample Extraction Data

Parameter	Wt/Vol Extracted	Extract Vol	Date	Time	Analyst	Method
TPH-D	1000 ml	1.00 ml	3/28/05	9:15	J. Davis	3510

TestAmerica
ANALYTICAL TESTING CORPORATION

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ANALYTICAL REPORT

Laboratory Number: 05-A41294
Sample ID: W-29-MW7

Surrogate	% Recovery	Target Range
TPH Hi Surr., o-Terphenyl	125.	55. - 133.
BTEX/GRO Surr., a,a,a-TFT	88.	69. - 132.
GC FID Surrogate	70.0	50. - 150.
VOA Surr 1,2-DCA-d4	80.	73. - 127.
VOA Surr Toluene-d8	98.	79. - 113.
VOA Surr, 4-BFB	98.	79. - 125.
VOA Surr, DBFM	95.	75. - 134.

LABORATORY COMMENTS:

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U = Analyte analyzed for but not detected.
# = Recovery outside Laboratory historical or method prescribed limits.
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B = Analyte was detected in the method blank.
E = Estimated Value above the calibration limit of the instrument.

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ANALYTICAL REPORT

ENVIRONMENTAL RESOLUTIONS, INC 10203
GEORGE SALLEY
20372 NORTH SEA CIRCLE
LAKE FOREST, CA 92630

Lab Number: 05-A41295
Sample ID: W-29-MW1
Sample Type: Water
Site ID: 18-MLJ

Date Collected: 3/21/05
Time Collected: 14:30
Date Received: 3/23/05
Time Received: 7:50

Project: ERI 3163 13
Project Name: EXXONMOBIL 18-MLJ
Sampler: JAMES CAVERS

Purchase Order: 4506125986

Parameter	Result	Flag	Units	Limit of Quantitation	Limit of Detection	Dilution Factor	Date	Time	Method	Analyst	Batch
**Volatile Organics											
**Ethyl-t-butylether	<1.00		ug/l	1.00	0.27	1.	3/25/05	15:19	8260B	S. Edwards	2734
**tert-amyl methyl ether	1.00		ug/L	1.00	0.30	1.0	3/25/05	15:19	8260B	S. Edwards	2734
**Tertiary butyl alcohol	17.0		ug/l	10.0	4.28	1.0	3/25/05	15:19	8260B	S. Edwards	2734
**Benzene	0.70		ug/l	0.50	0.25	1.0	3/25/05	15:19	8260B	S. Edwards	2734
**Ethylbenzene	0.60		ug/l	0.50	0.19	1.0	3/25/05	15:19	8260B	S. Edwards	2734
**Toluene	<0.50		ug/l	0.50	0.17	1.	3/25/05	15:19	8260B	S. Edwards	2734
**Xylenes (Total)	3.40		ug/l	0.50	0.33	1.0	3/25/05	15:19	8260B	S. Edwards	2734
**Methyl-t-butyl ether	6.10		ug/l	1.00	0.23	1.0	3/25/05	15:19	8260B	S. Edwards	2734
Ethanol	<200.		ug/L	200.	30.7	1.	3/25/05	15:19	8260B	S. Edwards	2734
**Diisopropyl ether	<1.00		ug/l	1.00	0.18	1.	3/25/05	15:19	8260/SA05-77	S. Edwards	2734
**Methanol	<5000		ug/l	5000	160	1.	3/30/05	13:55	8015B	K. Roberso	2765
**TPH-GC											
**TPH (Gasoline Range)	<50.0		ug/l	50.0	33.0	1.	3/29/05	20:49	CA-LUFT	A. Cobbs	4812
**TPH (Diesel Range,C13-C22)	<500.		ug/l	500.	33.	1.	3/30/05	11:25	8015B/CA-LUFT	B. Yanna	4925

Sample Extraction Data

Parameter	Wt/Vol Extracted	Extract Vol	Date	Time	Analyst	Method
TPH-D	1000 ml	1.00 ml	3/28/05	9:15	J. Davis	3510

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ANALYTICAL REPORT

Laboratory Number: 05-A41295
Sample ID: W-29-MW1

Surrogate	% Recovery	Target Range
TPH Hi Surr., o-Terphenyl	75.	55. - 133.
BTEX/GRO Surr., a,a,a-TFT	91.	69. - 132.
GC FID Surrogate	53.0	50. - 150.
VOA Surr 1,2-DCA-d4	81.	73. - 127.
VOA Surr Toluene-d8	100.	79. - 113.
VOA Surr, 4-BFB	97.	79. - 125.
VOA Surr, DBFM	100.	75. - 134.

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ANALYTICAL REPORT

ENVIRONMENTAL RESOLUTIONS, INC 10203
GEORGE SALLEY
20372 NORTH SEA CIRCLE
LAKE FOREST, CA 92630

Lab Number: 05-A41296
Sample ID: W-28-MW3
Sample Type: Water
Site ID: 18-MLJ

Date Collected: 3/21/05
Time Collected: 14:50
Date Received: 3/23/05
Time Received: 7:50

Project: ERI 3163 13
Project Name: EXXONMOBIL 18-MLJ
Sampler: JAMES CAVERS

Purchase Order: 4506125986

Parameter	Result	Flag	Units	Limit of Quantitation	Limit of Detection	Dilution Factor	Date	Time	Method	Analyst	Batch
**Volatile Organics											
**Ethyl-t-butylether	<1.00		ug/l	1.00	0.27	1.	3/25/05	15:41	8260B	S. Edwards	2734
**tert-amyl methyl ether	<1.00		ug/L	1.00	0.30	1.	3/25/05	15:41	8260B	S. Edwards	2734
**Tertiary butyl alcohol	97.4		ug/l	10.0	4.28	1.0	3/25/05	15:41	8260B	S. Edwards	2734
**Benzene	2.60		ug/l	0.50	0.25	1.0	3/25/05	15:41	8260B	S. Edwards	2734
**Ethylbenzene	1.20		ug/l	0.50	0.19	1.0	3/25/05	15:41	8260B	S. Edwards	2734
**Toluene	<0.50		ug/l	0.50	0.17	1.	3/25/05	15:41	8260B	S. Edwards	2734
**Xylenes (Total)	1.00		ug/l	0.50	0.33	1.0	3/25/05	15:41	8260B	S. Edwards	2734
**Methyl-t-butyl ether	120.		ug/l	1.00	0.23	1.0	3/25/05	15:41	8260B	S. Edwards	2734
Ethanol	<200.		ug/L	200.	30.7	1.	3/25/05	15:41	8260B	S. Edwards	2734
**Diisopropyl ether	<1.00		ug/l	1.00	0.18	1.	3/25/05	15:41	8260/SA05-77	S. Edwards	2734
**Methanol	<5000		ug/l	5000	160	1.	3/30/05	14:01	8015B	K. Roberso	2765
**TPH-GC											
**TPH (Gasoline Range)	222.		ug/l	50.0	33.0	1.0	3/29/05	21:24	CA-LUFT	A. Cobbs	4812
**TPH (Diesel Range,C13-C22)	<500.		ug/l	500.	33.	1.	3/30/05	11:46	8015B/CA-LUFTB	. Yanna	4925

Sample Extraction Data

Parameter	Wt/Vol Extracted	Extract Vol	Date	Time	Analyst	Method
TPH-D	1000 ml	1.00 ml	3/28/05	9:15	J. Davis	3510

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ANALYTICAL REPORT

Laboratory Number: 05-A41296
Sample ID: W-28-MW3

Surrogate	% Recovery	Target Range
TPH Hi Surr., o-Terphenyl	91.	55. - 133.
BTEX/GRO Surr., a,a,a-TFT	94.	69. - 132.
GC FID Surrogate	60.0	50. - 150.
VOA Surr 1,2-DCA-d4	81.	73. - 127.
VOA Surr Toluene-d8	100.	79. - 113.
VOA Surr, 4-BFB	96.	79. - 125.
VOA Surr, DBFM	100.	75. - 134.

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ANALYTICAL REPORT

ENVIRONMENTAL RESOLUTIONS, INC 10203
GEORGE SALLEY
20372 NORTH SEA CIRCLE
LAKE FOREST, CA 92630

Lab Number: 05-A41297
Sample ID: W-27-MW4
Sample Type: Water
Site ID: 18-MLJ

Date Collected: 3/21/05
Time Collected: 14:35
Date Received: 3/23/05
Time Received: 7:50

Project: ERI 3163 13
Project Name: EXXONMOBIL 18-MLJ
Sampler: JAMES CAVERS

Purchase Order: 4506125986

Parameter	Result	Flag	Units	Limit of Quantitation	Limit of Detection	Dilution Factor	Date	Time	Method	Analyst	Batch
**Volatile Organics											
**Ethyl-t-butylether	1.20		ug/l	1.00	0.27	1.0	3/25/05	16:03	8260B	S. Edwards	2734
**tert-amyl methyl ether	1.10		ug/L	1.00	0.30	1.0	3/25/05	16:03	8260B	S. Edwards	2734
**Tertiary butyl alcohol	49700		ug/l	1000	428.	100.	3/30/05	1:57	8260B	I. Ahmed	4957
**Benzene	35.6		ug/l	0.50	0.25	1.0	3/25/05	16:03	8260B	S. Edwards	2734
**Ethylbenzene	0.90		ug/l	0.50	0.19	1.0	3/25/05	16:03	8260B	S. Edwards	2734
**Toluene	<0.50		ug/l	0.50	0.17	1.	3/25/05	16:03	8260B	S. Edwards	2734
**Xylenes (Total)	13.8		ug/l	0.50	0.33	1.0	3/25/05	16:03	8260B	S. Edwards	2734
**Methyl-t-butyl ether	76.6		ug/l	1.00	0.23	1.0	3/25/05	16:03	8260B	S. Edwards	2734
Ethanol	<200.		ug/L	200.	30.7	1.	3/25/05	16:03	8260B	S. Edwards	2734
**Diisopropyl ether	<1.00		ug/l	1.00	0.18	1.	3/25/05	16:03	8260/SA05-77	S. Edwards	2734
**Methanol	1800	J	ug/l	5000	160	1.0	3/30/05	14:08	8015B	K. Roberso	2765
**TPH-GC											
**TPH (Gasoline Range)	2060		ug/l	50.0	33.0	1.0	3/29/05	21:59	CA-LUFT	A. Cobbs	4812
**TPH (Diesel Range,C13-C22)	831.		ug/l	500.	33.	1.0	3/30/05	12:07	8015B/CA-LUFTB	. Yanna	4925

Sample Extraction Data

Parameter	Wt/Vol Extracted	Extract Vol	Date	Time	Analyst	Method
TPH-D	1000 ml	1.00 ml	3/28/05	9:15	J. Davis	3510

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ANALYTICAL REPORT

Laboratory Number: 05-A41297
Sample ID: W-27-MW4

Surrogate	% Recovery	Target Range
TPH Hi Surr., o-Terphenyl	83.	55. - 133.
BTEX/GRO Surr., a,a,a-TFT	104.	69. - 132.
GC FID Surrogate	65.0	50. - 150.
VOA Surr 1,2-DCA-d4	113.	73. - 127.
VOA Surr Toluene-d8	111.	79. - 113.
VOA Surr, 4-BFB	110.	79. - 125.
VOA Surr, DBFM	110.	75. - 134.

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ANALYTICAL REPORT

ENVIRONMENTAL RESOLUTIONS, INC 10203
GEORGE SALLEY
20372 NORTH SEA CIRCLE
LAKE FOREST, CA 92630

Lab Number: 05-A41298
Sample ID: W-27-MW2
Sample Type: Water
Site ID: 18-MLJ

Date Collected: 3/21/05
Time Collected: 15:00
Date Received: 3/23/05
Time Received: 7:50

Project: ERI 3163 13
Project Name: EXXONMOBIL 18-MLJ
Sampler: JAMES CAVERS

Purchase Order: 4506125986

Parameter	Result	Flag	Units	Limit of Quantitation	Limit of Detection	Dilution Factor	Date	Time	Method	Analyst	Batch
**Volatile Organics											
**Ethyl-t-butylether	0.60	J	ug/l	1.00	0.27	1.0	3/25/05	16:25	8260B	S. Edwards	2734
**tert-amyl methyl ether	0.70	J	ug/L	1.00	0.30	1.0	3/25/05	16:25	8260B	S. Edwards	2734
**Tertiary butyl alcohol	522.		ug/l	100.	42.8	10.0	3/27/05	2:17	8260B	I. Ahmed	2742
**Benzene	80.7		ug/l	0.50	0.25	1.0	3/25/05	16:25	8260B	S. Edwards	2734
**Ethylbenzene	538.		ug/l	10.0	1.90	10.0	3/27/05	2:17	8260B	I. Ahmed	2742
**Toluene	125.		ug/l	0.50	0.17	1.0	3/25/05	16:25	8260B	S. Edwards	2734
**Xylenes (Total)	90.1		ug/l	0.50	0.33	1.0	3/25/05	16:25	8260B	S. Edwards	2734
**Methyl-t-butyl ether	1370		ug/l	20.0	2.30	10.0	3/27/05	2:17	8260B	I. Ahmed	2742
Ethanol	<200.		ug/L	200.	30.7	1.	3/25/05	16:25	8260B	S. Edwards	2734
**Diisopropyl ether	<1.00		ug/l	1.00	0.18	1.	3/25/05	16:25	8260/SA05-77	S. Edwards	2734
**Methanol	<5000		ug/l	5000	160	1.	3/30/05	14:14	8015B	K. Roberso	2765
**TPH-GC											
**TPH (Gasoline Range)	2670		ug/l	500.	330.	10.0	3/31/05	11:36	CA-LUFT	A. Cobbs	7049
**TPH (Diesel Range,C13-C22)	<500.		ug/l	500.	33.	1.	3/30/05	12:27	8015B/CA-LUFT	B. Yanna	4925

Sample Extraction Data

Parameter	Wt/Vol Extracted	Extract Vol	Date	Time	Analyst	Method
TPH-D	1000 ml	1.00 ml	3/28/05	9:15	J. Davis	3510

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ANALYTICAL REPORT

Laboratory Number: 05-A41298
Sample ID: W-27-MW2

Surrogate	% Recovery	Target Range
TPH Hi Surr., o-Terphenyl	74.	55. - 133.
BTEX/GRO Surr., a,a,a-TFT	94.	69. - 132.
GC FID Surrogate	63.0	50. - 150.
VOA Surr 1,2-DCA-d4	83.	73. - 127.
VOA Surr Toluene-d8	100.	79. - 113.
VOA Surr, 4-BFB	100.	79. - 125.
VOA Surr, DBFM	102.	75. - 134.

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ANALYTICAL REPORT

ENVIRONMENTAL RESOLUTIONS, INC 10203
GEORGE SALLEY
20372 NORTH SEA CIRCLE
LAKE FOREST, CA 92630

Lab Number: 05-A41299
Sample ID: W-27-MW5
Sample Type: Water
Site ID: 18-MLJ

Date Collected: 3/21/05
Time Collected: 14:55
Date Received: 3/23/05
Time Received: 7:50

Project: ERI 3163 13
Project Name: EXXONMOBIL 18-MLJ
Sampler: JAMES CAVERS

Purchase Order: 4506125986

Parameter	Result	Flag	Units	Limit of Quantitation	Limit of Detection	Dilution Factor	Date	Time	Method	Analyst	Batch
**Volatile Organics											
**Ethyl-t-butylether	<1.00		ug/l	1.00	0.27	1.	3/25/05	16:48	8260B	S. Edwards	2734
**tert-amyl methyl ether	<1.00		ug/L	1.00	0.30	1.	3/25/05	16:48	8260B	S. Edwards	2734
**Tertiary butyl alcohol	5250		ug/l	100.	42.8	10.0	3/30/05	2:19	8260B	I. Ahmed	4957
**Benzene	23.1		ug/l	0.50	0.25	1.0	3/25/05	16:48	8260B	S. Edwards	2734
**Ethylbenzene	8.10		ug/l	0.50	0.19	1.0	3/25/05	16:48	8260B	S. Edwards	2734
**Toluene	<0.50		ug/l	0.50	0.17	1.	3/25/05	16:48	8260B	S. Edwards	2734
**Xylenes (Total)	1.40		ug/l	0.50	0.33	1.0	3/25/05	16:48	8260B	S. Edwards	2734
**Methyl-t-butyl ether	9.70		ug/l	1.00	0.23	1.0	3/25/05	16:48	8260B	S. Edwards	2734
Ethanol	<200.		ug/L	200.	30.7	1.	3/25/05	16:48	8260B	S. Edwards	2734
**Diisopropyl ether	<1.00		ug/l	1.00	0.18	1.	3/25/05	16:48	8260/SA05-77	S. Edwards	2734
**Methanol	<5000		ug/l	5000	160	1.	3/30/05	14:20	8015B	K. Roberso	2765
**TPH-GC											
**TPH (Gasoline Range)	1420		ug/l	50.0	33.0	1.0	3/29/05	23:09	CA-LUFT	A. Cobbs	4812
**TPH (Diesel Range,C13-C22)	560.		ug/l	500.	33.	1.0	3/30/05	12:48	8015B/CA-LUFT	B. Yanna	4925

Sample Extraction Data

Parameter	Wt/Vol Extracted	Extract Vol	Date	Time	Analyst	Method
TPH-D	1000 ml	1.00 ml	3/28/05	9:15	J. Davis	3510

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ANALYTICAL REPORT

Laboratory Number: 05-A41299
Sample ID: W-27-MW5

Surrogate	% Recovery	Target Range
TPH Hi Surr., o-Terphenyl	74.	55. - 133.
BTEX/GRO Surr., a,a,a-TFT	91.	69. - 132.
GC FID Surrogate	65.0	50. - 150.
VOA Surr 1,2-DCA-d4	106.	73. - 127.
VOA Surr Toluene-d8	113.	79. - 113.
VOA Surr, 4-BFB	108.	79. - 125.
VOA Surr, DBFM	109.	75. - 134.

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ANALYTICAL REPORT

ENVIRONMENTAL RESOLUTIONS, INC 10203
GEORGE SALLEY
20372 NORTH SEA CIRCLE
LAKE FOREST, CA 92630

Lab Number: 05-A41300
Sample ID: W-27-MW6
Sample Type: Water
Site ID: 18-MLJ

Date Collected: 3/21/05
Time Collected: 15:10
Date Received: 3/23/05
Time Received: 7:50

Project: ERI 3163 13
Project Name: EXXONMOBIL 18-MLJ
Sampler: JAMES CAVERS

Purchase Order: 4506125986

Parameter	Result	Flag	Units	Limit of Quantitation	Limit of Detection	Dilution Factor	Date	Time	Method	Analyst	Batch
**Volatile Organics											
**Ethyl-t-butylether	<1.00		ug/l	1.00	0.27	1.	3/25/05	17:10	8260B	S. Edwards	2734
**tert-amyl methyl ether	<1.00		ug/L	1.00	0.30	1.	3/25/05	17:10	8260B	S. Edwards	2734
**Tertiary butyl alcohol	<50.0		ug/l	50.0	21.4	5.	3/27/05	3:01	8260B	I. Ahmed	2742
**Benzene	<0.50		ug/l	0.50	0.25	1.	3/25/05	17:10	8260B	S. Edwards	2734
**Ethylbenzene	585.		ug/l	5.00	0.95	5.0	3/27/05	3:01	8260B	I. Ahmed	2742
**Toluene	<0.50		ug/l	0.50	0.17	1.	3/25/05	17:10	8260B	S. Edwards	2734
**Xylenes (Total)	122.		ug/l	0.50	0.33	1.0	3/25/05	17:10	8260B	S. Edwards	2734
**Methyl-t-butyl ether	<1.00		ug/l	1.00	0.23	1.	3/25/05	17:10	8260B	S. Edwards	2734
Ethanol	<200.		ug/L	200.	30.7	1.	3/25/05	17:10	8260B	S. Edwards	2734
**Diisopropyl ether	<1.00		ug/l	1.00	0.18	1.	3/25/05	17:10	8260/SA05-77	S. Edwards	2734
**Methanol	1200	J	ug/l	5000	160	1.0	3/31/05	14:06	8015B	K. Roberso	2766
**TPH-GC											
**TPH (Gasoline Range)	3960		ug/l	500.	330.	10.0	3/31/05	12:11	CA-LUFT	A. Cobbs	7049
**TPH (Diesel Range,C13-C22)	749.		ug/l	500.	33.	1.0	3/30/05	13:09	8015B/CA-LUFT	B. Yanna	4925

Sample Extraction Data

Parameter	Wt/Vol Extracted	Extract Vol	Date	Time	Analyst	Method
TPH-D	1000 ml	1.00 ml	3/28/05	9:15	J. Davis	3510

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ANALYTICAL REPORT

Laboratory Number: 05-A41300
Sample ID: W-27-MW6

Surrogate	% Recovery	Target Range
TPH Hi Surr., o-Terphenyl	70.	55. - 133.
BTEX/GRO Surr., a,a,a-TFT	100.	69. - 132.
GC FID Surrogate	73.0	50. - 150.
VOA Surr 1,2-DCA-d4	81.	73. - 127.
VOA Surr Toluene-d8	98.	79. - 113.
VOA Surr, 4-BFB	99.	79. - 125.
VOA Surr, DBFM	104.	75. - 134.

LABORATORY COMMENTS:

ND = Not detected at the limit of Quantitation.
U = Analyte analyzed for but not detected.
# = Recovery outside Laboratory historical or method prescribed limits.
J = All results evaluated to the Limit of Detection for reporting. Values below the Limit of Quantitation but above the Limit of Detection are qualified with J as estimated.
B = Analyte was detected in the method blank.
E = Estimated Value above the calibration limit of the instrument.

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ANALYTICAL REPORT

ENVIRONMENTAL RESOLUTIONS, INC 10203
GEORGE SALLEY
20372 NORTH SEA CIRCLE
LAKE FOREST, CA 92630

Lab Number: 05-A41301
Sample ID: TRIP BLANKS
Sample Type: Water
Site ID: 18-MLJ

Date Collected: 3/21/05
Time Collected:
Date Received: 3/23/05
Time Received: 7:50

Project: ERI 3163 13
Project Name: EXXONMOBIL 18-MLJ
Sampler: JAMES CAVERS

Purchase Order: 4506125986

Parameter	Result	Flag	Units	Limit of Quantitation	Limit of Detection	Dilution Factor	Date	Time	Method	Analyst	Batch
**Volatile Organics											
**Ethyl-t-butylether	<1.00		ug/l	1.00	0.27	1.	3/25/05	13:50	8260B	S. Edwards	2734
**tert-amyl methyl ether	<1.00		ug/L	1.00	0.30	1.	3/25/05	13:50	8260B	S. Edwards	2734
**Tertiary butyl alcohol	<10.0		ug/l	10.0	4.28	1.	3/25/05	13:50	8260B	S. Edwards	2734
**Benzene	<0.50		ug/l	0.50	0.25	1.	3/25/05	13:50	8260B	S. Edwards	2734
**Ethylbenzene	<0.50		ug/l	0.50	0.19	1.	3/25/05	13:50	8260B	S. Edwards	2734
**Toluene	<0.50		ug/l	0.50	0.17	1.	3/25/05	13:50	8260B	S. Edwards	2734
**Xylenes (Total)	<0.50		ug/l	0.50	0.33	1.	3/25/05	13:50	8260B	S. Edwards	2734
**Methyl-t-butyl ether	<1.00		ug/l	1.00	0.23	1.	3/25/05	13:50	8260B	S. Edwards	2734
**Diisopropyl ether	<1.00		ug/l	1.00	0.18	1.	3/25/05	13:50	8260/SA05-77	S. Edwards	2734
**TPH-GC											
**TPH (Gasoline Range)	<50.0		ug/l	50.0	33.0	1.	3/29/05	19:40	CA-LUFT	A. Cobbs	4812

Surrogate	% Recovery	Target Range
BTEX/GRO Surr., a,a,a-TFT	84.	69. - 132.
VOA Surr 1,2-DCA-d4	81.	73. - 127.
VOA Surr Toluene-d8	99.	79. - 113.
VOA Surr, 4-BFB	96.	79. - 125.
VOA Surr, DBFM	101.	75. - 134.

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ANALYTICAL REPORT

Laboratory Number: 05-A41301
Sample ID: TRIP BLANKS

LABORATORY COMMENTS:

ND = Not detected at the limit of Quantitation.
U = Analyte analyzed for but not detected.
# = Recovery outside Laboratory historical or method prescribed limits.
J = All results evaluated to the Limit of Detection for reporting. Values below the Limit of Quantitation but above the Limit of Detection are qualified with J as estimated.
B = Analyte was detected in the method blank.
E = Estimated Value above the calibration limit of the instrument.

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PROJECT QUALITY CONTROL DATA
Project Number: ERI 3163 13
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Matrix Spike Recovery

Analyte	units	Orig. Val.	MS Val	Spike Conc	Recovery	Target Range	Q.C. Batch	Spike Sample
UST ANALYSIS								
TPH (Gasoline Range)	mg/l	< 0.0500	1.12	1.00	112	43. - 150.	4812	blank
TPH (Gasoline Range)	mg/l	< 0.0500	1.05	1.00	105	43. - 150.	4812	M:blank
TPH (Diesel Range,C13-C22)	mg/l	< 0.500	0.883	1.00	88	35. - 124.	4925	blank
TPH (Diesel Range,C13-C22)	mg/l	< 0.500	0.856	1.00	86	35. - 124.	4925	M:blank
BTEX/GRO Surr., a,a,a-TFT	% Recovery				113	69. - 132.	4812	
BTEX/GRO Surr., a,a,a-TFT	% Recovery				111	69. - 132.	4812	

Matrix Spike Recovery

Analyte	units	Orig. Val.	MS Val	Spike Conc	Recovery	Target Range	Q.C. Batch	Spike Sample
VOA PARAMETERS								
Benzene	mg/l	< 0.00025	0.0499	0.0500	100	62. - 143.	2734	BLANK
Benzene	mg/l	< 0.00025	0.0446	0.0500	89	62. - 143.	2734	M:BLANK
Toluene	mg/l	< 0.00017	0.0513	0.0500	103	63. - 141.	2734	BLANK
Toluene	mg/l	< 0.00017	0.0462	0.0500	92	63. - 141.	2734	M:BLANK
VOA Surr 1,2-DCA-d4	% Rec				81	73. - 127.	2734	
VOA Surr 1,2-DCA-d4	% Rec				77	73. - 127.	2734	
VOA Surr 1,2-DCA-d4	% Rec				81	73. - 127.	2742	
VOA Surr 1,2-DCA-d4	% Rec				80	73. - 127.	2742	
VOA Surr Toluene-d8	% Rec				100	79. - 113.	2734	
VOA Surr Toluene-d8	% Rec				101	79. - 113.	2734	
VOA Surr Toluene-d8	% Rec				95	79. - 113.	2742	
VOA Surr Toluene-d8	% Rec				97	79. - 113.	2742	
VOA Surr, 4-BFB	% Rec				96	79. - 125.	2734	
VOA Surr, 4-BFB	% Rec				94	79. - 125.	2734	
VOA Surr, 4-BFB	% Rec				98	79. - 125.	2742	
VOA Surr, 4-BFB	% Rec				101	79. - 125.	2742	
VOA Surr, DBFM	% Rec				98	75. - 134.	2734	
VOA Surr, DBFM	% Rec				101	75. - 134.	2734	
VOA Surr, DBFM	% Rec				102	75. - 134.	2742	

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PROJECT QUALITY CONTROL DATA
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Matrix Spike Recovery

Analyte	units	Orig. Val.	MS Val	Spike Conc	Recovery	Target Range	Q.C. Batch	Spike Sample
VOA Surr, DBFM	% Rec				97	75. - 134.	2742	

Matrix Spike Recovery

Analyte	units	Orig. Val.	MS Val	Spike Conc	Recovery	Target Range	Q.C. Batch	Spike Sample
MISC PARAMETERS								
Methanol	mg/l	1.40	43.2	50.0	84	40 - 140	2765	05-A41198
Methanol	mg/l	1.40	46.9	50.0	91	40 - 140	2765	M:05A41198
Methanol	mg/l	1.20	46.8	50.0	91	40 - 140	2766	05-A41300
Methanol	mg/l	1.20	50.1	50.0	98	40 - 140	2766	M:05A41300

Matrix Spike Duplicate

Analyte	units	Orig. Val.	Duplicate	RPD	Limit	Q.C. Batch
UST PARAMETERS						
TPH (Gasoline Range)	mg/l	1.12	1.05	6.45	27.	4812
TPH (Diesel Range,C13-C22)	mg/l	0.883	0.856	3.11	36.	4925
BTEX/GRO Surr., a,a,a-TFT	% Recovery		111.			4812

Matrix Spike Duplicate

Analyte	units	Orig. Val.	Duplicate	RPD	Limit	Q.C. Batch
VOA PARAMETERS						
Benzene	mg/l	0.0499	0.0446	11.22	27.	2734
Toluene	mg/l	0.0513	0.0462	10.46	34.	2734

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PROJECT QUALITY CONTROL DATA
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VOA Surr 1,2-DCA-d4	% Rec	77.	2734
VOA Surr 1,2-DCA-d4	% Rec	80.	2742
VOA Surr Toluene-d8	% Rec	101.	2734
VOA Surr Toluene-d8	% Rec	97.	2742
VOA Surr, 4-BFB	% Rec	94.	2734
VOA Surr, 4-BFB	% Rec	101.	2742
VOA Surr, DBFM	% Rec	101.	2734
VOA Surr, DBFM	% Rec	97.	2742

Matrix Spike Duplicate

Analyte	units	Orig. Val.	Duplicate	RPD	Limit	Q.C. Batch
MISC PARAMETERS						
Methanol	mg/l	43.2	46.9	8.21	50	2765
Methanol	mg/l	46.8	50.1	6.81	50	2766

Laboratory Control Data

Analyte	units	Known Val.	Analyzed Val	% Recovery	Target Range	Q.C. Batch
UST PARAMETERS						
TPH (Gasoline Range)	mg/l	1.00	1.09	109	64 - 130	4812
TPH (Gasoline Range)	mg/l	1.00	1.11	111	64 - 130	7049
TPH (Diesel Range,C13-C22)	mg/l	1.00	1.11	111	41 - 120	4925
BTEX/GRO Surr., a,a,a-TFT	% Recovery			110	69 - 132	4812
BTEX/GRO Surr., a,a,a-TFT	% Recovery			106	69 - 132	7049

Laboratory Control Data

Analyte	units	Known Val.	Analyzed Val	% Recovery	Target Range	Q.C. Batch
VOA PARAMETERS						
Ethyl-t-butylether	mg/l	0.0500	0.0392	78	67 - 140	2734
tert-amyl methyl ether	mg/L	0.0500	0.0431	86	68 - 134	2734
Tertiary butyl alcohol	mg/l	0.500	0.435	87	28 - 182	2734

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PROJECT QUALITY CONTROL DATA
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Laboratory Control Data

Analyte	units	Known Val.	Analyzed Val	% Recovery	Target Range	Q.C. Batch
Tertiary butyl alcohol	mg/l	0.500	0.485	97	28 - 182	2742
Tertiary butyl alcohol	mg/l	0.500	0.570	114	28 - 182	4957
Benzene	mg/l	0.0500	0.0482	96	78 - 123	2734
Ethylbenzene	mg/l	0.0500	0.0467	93	80 - 124	2734
Ethylbenzene	mg/l	0.0500	0.0433	87	80 - 124	2742
Toluene	mg/l	0.0500	0.0524	105	77 - 124	2734
Xylenes (Total)	mg/l	0.150	0.146	97	81 - 124	2734
Methyl-t-butyl ether	mg/l	0.0500	0.0415	83	69 - 136	2734
Methyl-t-butyl ether	mg/l	0.0500	0.0427	85	69 - 136	2742
Ethanol	mg/L	5.00	5.00	100	48 - 164	2734
Diisopropyl ether	mg/l	0.0500	0.0467	93	65 - 140	2734
Methanol	mg/l	50.0	44.8	90	69 - 125	2765
Methanol	mg/l	50.0	48.9	98	69 - 125	2766
VOA Surr 1,2-DCA-d4	% Rec			79	73 - 127	2734
VOA Surr 1,2-DCA-d4	% Rec			86	73 - 127	2742
VOA Surr 1,2-DCA-d4	% Rec			113	73 - 127	4957
VOA Surr Toluene-d8	% Rec			101	79 - 113	2734
VOA Surr Toluene-d8	% Rec			98	79 - 113	2742
VOA Surr Toluene-d8	% Rec			108	79 - 113	4957
VOA Surr, 4-BFB	% Rec			95	79 - 125	2734
VOA Surr, 4-BFB	% Rec			102	79 - 125	2742
VOA Surr, 4-BFB	% Rec			106	79 - 125	4957
VOA Surr, DBFM	% Rec			97	75 - 134	2734
VOA Surr, DBFM	% Rec			102	75 - 134	2742
VOA Surr, DBFM	% Rec			110	75 - 134	4957

Laboratory Control Data

Analyte	units	Known Val.	Analyzed Val	% Recovery	Target Range	Q.C. Batch
MISC PARAMETERS						
Methanol	mg/l	50.0	44.8	90	69 - 125	2765
Methanol	mg/l	50.0	48.9	98	69 - 125	2766

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PROJECT QUALITY CONTROL DATA
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Blank Data

Analyte	Blank Value	Units	Q.C. Batch	Date Analyzed	Time Analyzed
UST PARAMETERS					
TPH (Gasoline Range)	< 0.0500	mg/l	4812	3/29/05	11:26
TPH (Gasoline Range)	< 0.0500	mg/l	7049	3/31/05	11:01
TPH (Diesel Range,C13-C22)	< 0.500	mg/l	4925	3/30/05	9:02

Blank Data

Analyte	Blank Value	Units	Q.C. Batch	Date Analyzed	Time Analyzed
UST PARAMETERS					
BTEX/GRO Surr., a,a,a-TFT	83.	% Recovery	4812	3/29/05	11:26
BTEX/GRO Surr., a,a,a-TFT	91.	% Recovery	7049	3/31/05	11:01

Blank Data

Analyte	Blank Value	Units	Q.C. Batch	Date Analyzed	Time Analyzed
VOA PARAMETERS					
Ethyl-t-butylether	< 0.00027	mg/l	2734	3/25/05	13:27
tert-amyl methyl ether	< 0.00030	mg/L	2734	3/25/05	13:27
Tertiary butyl alcohol	< 0.00428	mg/l	2734	3/25/05	13:27
Tertiary butyl alcohol	< 0.00428	mg/l	2742	3/26/05	18:09
Tertiary butyl alcohol	< 0.00428	mg/l	4957	3/29/05	20:01
Benzene	< 0.00025	mg/l	2734	3/25/05	13:27
Ethylbenzene	< 0.00019	mg/l	2734	3/25/05	13:27
Ethylbenzene	< 0.00019	mg/l	2742	3/26/05	18:09
Toluene	< 0.00017	mg/l	2734	3/25/05	13:27
Xylenes (Total)	< 0.00033	mg/l	2734	3/25/05	13:27
Methyl-t-butyl ether	< 0.00023	mg/l	2734	3/25/05	13:27
Methyl-t-butyl ether	< 0.00023	mg/l	2742	3/26/05	18:09
Ethanol	< 0.0307	mg/L	2734	3/25/05	13:27
Diisopropyl ether	< 0.00018	mg/l	2734	3/25/05	13:27

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PROJECT QUALITY CONTROL DATA
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VOA Surr 1,2-DCA-d4	82.	% Rec	2734	3/25/05	13:27
VOA Surr 1,2-DCA-d4	81.	% Rec	2742	3/26/05	18:09
VOA Surr 1,2-DCA-d4	107.	% Rec	4957	3/29/05	20:01
VOA Surr Toluene-d8	100.	% Rec	2734	3/25/05	13:27
VOA Surr Toluene-d8	96.	% Rec	2742	3/26/05	18:09
VOA Surr Toluene-d8	112.	% Rec	4957	3/29/05	20:01
VOA Surr, 4-BFB	99.	% Rec	2734	3/25/05	13:27
VOA Surr, 4-BFB	103.	% Rec	2742	3/26/05	18:09
VOA Surr, 4-BFB	110.	% Rec	4957	3/29/05	20:01
VOA Surr, DBFM	101.	% Rec	2734	3/25/05	13:27
VOA Surr, DBFM	103.	% Rec	2742	3/26/05	18:09
VOA Surr, DBFM	105.	% Rec	4957	3/29/05	20:01

Blank Data

Analyte	Blank Value	Units	Q.C. Batch	Date Analyzed	Time Analyzed
MISC PARAMETERS					
Methanol	4.40	mg/l	2765	3/30/05	12:02
Methanol	< 0.16	mg/l	2766	3/31/05	13:10

= Value outside Laboratory historical or method prescribed QC limits.

End of Report for Project 410354

TestAmerica
ANALYTICAL TESTING CORPORATION

Nashville Division

COOLER RECEIPT FORM **BC#** 410354

Client Name : ERI

Cooler Received/Opened On: 3/23/05 Accessioned By: James D. Jacobs

Log-in Personnel Signature

1. Temperature of Cooler when triaged: 0.5 **Degrees Celsius**
2. Were custody seals on outside of cooler?..... (YES)...NO....NA
   a. If yes, how many and where: 1 Front
3. Were custody seals on containers?..... (NO)...YES...NA
4. Were the seals intact, signed, and dated correctly?..... (YES)....NO...NA
5. Were custody papers inside cooler?..... (YES)....NO...NA
6. Were custody papers properly filled out (ink, signed, etc)?..... (YES)....NO...NA
7. Did you sign the custody papers in the appropriate place?..... (YES)...NO...NA
8. What kind of packing material used? (Bubblewrap) Peanuts Vermiculite Other None
9. Cooling process: (Ice) Ice-pack Ice (direct contact) Dry ice Other None
10. Did all containers arrive in good condition (unbroken)?..... (YES)...NO...NA
11. Were all container labels complete (#, date, signed, pres., etc)?..... (YES)...NO...NA
12. Did all container labels and tags agree with custody papers?..... (YES)..NO...NA
13. Were correct containers used for the analysis requested?..... (YES)..NO...NA
14. a. Were VOA vials received?..... (YES)..NO...NA
    b. Was there any observable head space present in any VOA vial?..... (NO)..YES...NA
15. Was sufficient amount of sample sent in each container?..... (YES)...NO...NA
16. Were correct preservatives used?..... (YES)...NO...NA
    If not, record standard ID of preservative used here_____
17. Was residual chlorine present?..... NO...YES...(NA)
18. Indicate the Airbill Tracking Number (last 4 digits for Fedex only) and Name of Courier below:

    9854

    (Fed-Ex) UPS Velocity DHL Route Off-street Misc.

19. If a Non-Conformance exists, see attached or comments below:

TestAmerica INCORPORATED

Nashville Division
2960 Foster Creighton
Nashville, TN 37204

Phone: 615-726-0177
Toll Free: 800-765-0980
Fax: 615-726-3404

410354

ExxonMobil

PG. 1 OF 1

Consultant Name:	Environmental Resolutions, Inc.	TA Account #:	10203
Address:	20372 North Sea Circle	Invoice To:	Marla Guensler
City/State/Zip:	Lake Forest, CA 92630	Report To:	GEORGE SALLY
ExxonMobil Territory Mgr:	Marla Guensler	PO #:	2005
Consultant Project Mgr:	GEORGE SALLY	Facility ID #	ERI 3163 13 / EXXONMOBIL 18MLJ
Consultant Telephone Number:	949-457-8950 Fax No.: 949-457-8956	Site Address	5005 NORTH LONG BEACH, CA
Sampler Name: (Print)	James D. Carver	City, State, Zip	LONG BEACH, CA
Sampler Signature:		Regulatory District (CA)	LARWQCB

Sample ID or Field ID	Date Sampled	Time Sampled	No. of Containers Shipped	Grab	Composite	Field Filtered	Preservative: Methanol	Sodium Bisulfate	HCl (Blue Label)	NaOH (Orange Label)	H_2SO_4 Plastic (Yellow Label)	H_2SO_4 Glass(Yellow Label)	HNO_3 (Red Label)	None (Black Label)	Matrix: Groundwater	Wastewater	Drinking Water	Sludge	Soil	Other (specify):	Analyze For: 8015M DIESEL-CAL LUFT	TPH/GAS-CAL LUFT	FULL SCAN 8260B +OXYGENATES / GC/MS	METHANOL -CAL LUFT	ETHANOL (8260)	*8260B/BTEX +OXYGENATES / GC/MS	*BTEX/MTBE BY 8021 8010	REDOX POTENTIAL	NITRATE/SULFATE	METHANE(8015)	RUSH TAT (Pre-Schedule)	5 Day TAT request	Fax Results (yes or no)	Due Date of Report
W-29-MW7	3.21.05	1440	6	X					X						X						X	X		X	X	X	41	29	4			X		
W-29-MW1	"	1430	"	"					"						"						X	X		X	X	X	"	29	5			"		
W-28-MW3	"	1450	"	"					"						"						X	X		X	X	X	"	29	6			"		
W-27-MW4	"	1435	"	"					"						"						X	X		X	X	X	"	29	7			"		
W-27-MW2	"	1500	"	"					"						"						X	X		X	X	X	"	29	8			"		
W-27-MW5	"	1455	"	"					"						"						X	X		X	X	X	"	29	9			"		
W-27-MW6	"	1510	"	"					"						"						X	X		X	X	X	"	30	0			"		
TRIP BLANKS	"	—	4	"					"						"							X				X	41	30	1			"		

Comments/Special Instructions: *OXYGENATES WHEN REQUESTED ABOVE TO INCLUDE; BTEX, MTBE, DIPE, ETBE, TAME, TBA.

CONSULTANT ID # ERIL
GLOBAL ID # T0603701794

"PLEASE E-MAIL ALL EDF FILES TO RSHEARER@ERI-US.COM"

Relinquished by:	Date	Time	Received by:	Date	Time
	3/22/05	11:10		3/22/05	11:10
Relinquished by:	Date	Time	Received by (Lab personel)	Date	Time
Fedex	3/22/05	1800		3/23/05	750

Laboratory Comments:

Temperature Upon Receipt: 0.5 °C
Sample Containers Intact? Y N
VOCs Free of Headspace? Y N

QC Deliverables (please circle one)
Level 2
Level 3
Level 4

5 DAY TURN-AROUND FOR EXXONMOBIL REQUIRED

Site Specific-if yes, please pre-schedule w/ TestAmerica Project Manager or attach specific instructions

PURGING AND SAMPLING RECORD - FIELD LOG

CLIENT NAME: EXXONMOBIL 18MLJ | ERI JOB # 3163 13 | 0.163 FOR A 2" WELL
SITE LOCATION: 5005 N. LONG BEACH BLVD | ANALYSIS: TPHg/8260B | 0.652 FOR A 4" WELL
FIELD CREW:JC/EG | DATE: 3/21/05 | TPHd | 1.167 FOR A 6" WELL

WELL #	TIME	DEPTH TO WATER	DEPTH TO WELL	CASE DIA	CASE VOL(gal)	PRG VOL	COND.	TEMP	pH
MW7	12:55 PM	29.09	48.35	4	12.57	39			
	1:08 PM					1	3.03	71.4	8.14
	1:14 PM					13	3.01	71.0	8.09
	1:20 PM					26	2.97	70.2	8.03
	1:26 PM					39	2.94	70.5	8.01
SW	2:40 PM	29.88							
COMMENTS	Water Cloudy								

WELL #	TIME	DEPTH TO WATER	DEPTH TO WELL	CASE DIA	CASE VOL	PRG VOL	COND.	TEMP	pH
MW1	12:57 PM	29.21	49.61	4	13.32	39			
	1:08 PM					1	2.16	73.1	7.41
	1:14 PM					13	2.11	72.7	7.36
	1:21 PM					26	2.06	72.4	7.38
	1:28 PM					39	2.05	72.2	7.39
SW	2:30 PM	30.33							
COMMENTS	Water Clear								

WELL #	TIME	DEPTH TO WATER	DEPTH TO WELL	CASE DIA	CASE VOL	PRG VOL	COND.	TEMP	pH
MW3	12:59 PM	28.88	49..64	4	12.45	36			
	1:08 PM					1	2.87	72.2	7.77
	1:13 PM					12	2.82	71.9	7.76
	1:19 PM					24	2.77	71.6	7.72
	1:25 PM					36	2.76	71.4	7.74
SW	2:50 PM	29.57							
COMMENTS	Water Clear								

WELL #	TIME	DEPTH TO WATER	DEPTH TO WELL	CASE DIA	CASE VOL	PRG VOL	COND.	TEMP	pH
MW4	1:55 PM	27.51	47.61	4	13.12	39			
	2:00 PM					1	2.09	71.7	7.72
	2:06 PM					13	2.06	71.6	7.69
	2:13 PM					26	2.02	71.1	7.66
	2:20 PM					39	2.01	71.3	7.64
SW	2:35 PM	29.12							
COMMENTS	Water Clear								

PURGING AND SAMPLING RECORD - FIELD LOG

CLIENT NAME: EXXONMOBIL 18MLJ | ERI JOB # 3163 13 | 0.163 FOR A 2" WELL
SITE LOCATION: 5005 N. LONG BEACH BLVD | ANALYSIS: TPHg/8260B | 0.652 FOR A 4" WELL
FIELD CREW:JC/EG DATE: 3/21/05 | TPHd | 1.167 FOR A 6" WELL

WELL #	TIME	DEPTH TO WATER	DEPTH TO WELL	CASE DIA	CASE VOL	PRG VOL	COND.	TEMP	pH
MW2	1:01 PM	27.96	50.78	4	14.90	45			
	1:33 PM					1	2.55	71.7	7.17
	1:41 PM					15	2.48	71.4	7.19
	1:50 PM					30	2.44	71.1	7.15
	1:59 PM					45	2.42	70.8	7.14
SW	3:00 PM	28.99							
COMMENTS	Water Clear								

WELL #	TIME	DEPTH TO WATER	DEPTH TO WELL	CASE DIA	CASE VOL	PRG VOL	COND.	TEMP	pH
MW5	1:57 PM	27.39	46.88	4	12.72	39			
	2:25 PM					1	2.36	72.4	8.13
	2:31 PM					13	2.31	72.1	8.11
	2:38 PM					26	2.29	71.7	8.06
	2:45 PM					39	2.28	71.8	8.04
SW	2:55 PM	29.44							
COMMENTS	Water Cloudy								

WELL #	TIME	DEPTH TO WATER	DEPTH TO WELL	CASE DIA	CASE VOL	PRG VOL	COND.	TEMP	pH
MW6	1:03 PM	27.76	47.77	4	13.06	39			
	1:33 PM					1	2.57	71.1	7.71
	1:39 PM					13	2.51	70.9	7.66
	1:46 PM					26	2.44	70.3	7.61
	1:53 PM					39	2.41	70.1	7.59
SW	3:10 PM	29.16							
COMMENTS	Water Cloudy								

WELL #	TIME	DEPTH TO WATER	DEPTH TO WELL	CASE DIA	CASE VOL	PRG VOL	COND.	TEMP	pH
SW									
COMMENTS:									

WELL SAMPLING AND SURVEYING

1) Open well heads. This may require a socket or a special allen wrench.

2) Survey the wells if this hasn't been done before as follows:

   a) Select a permanent benchmark (e.g. curb at corner of site, property line). Record on "SURVEYGW" form.
   b) Measure and record rectangular coordinates from benchmark to each well.
   c) Set up tripod and transit where it can see all wells and the benchmark = Station "A". If you can't see all wells, two transit locations must be used. At least one well surveyed from Station "A" must be resurveyed from Station "B". Preferably, two or more wells are resurveyed.
   d) Carefully level the tripod using the bubble indicator.
   e) Place stadia rod on benchmark and record height from crosshair to reference, (D_o).
   f) Place stadia rod on each well (at the notch) and record ht. from well to crosshair, (D_w).
   g) Calculate casing elevation as shown on data sheet SURVEYGW.

   To check the accuracy in leveling the transit, set the transit in second spot and repeat steps 2c through 2g. Recalculation of casing elevations should agree within 0.01 ft. or a third placement of the tripod will be required.

3) Decon the water level indicator before inserting into each well. Lower indicator until it beeps - raise and lower and mark the level on the tape with your thumb. Estimate level to the nearest 0.01 ft. Note any odor when the probe is withdrawn from the well. Look for the notch or ink mark on the top of the well and measure all levels from that. Notch should be on the highest side of the well pipe. If no side is high, notch should be on the north side. Measure from the casing adjacent to the notch - not from the bottom of the notch. If there is no notch - make one.

4) After measuring all water levels, check for a sheen in each well using a bailer. If the stainless bailer is used - decon before inserting into each well. If there is a sheen, do not purge or sample. The presence of liquid phase hydrocarbons means the concentration in the water will be high anyway and the pump will be difficult to get clean enough to avoid contaminating other wells.

5) Developing: If the well has not been developed (it is new), surge the well by moving bailer up and down vigorously in the well for about 5 minutes. This will wash silt from the sand pack into the well where it can be removed.

6) Pull out as much silt as possible by running the bailer all the way to the bottom and withdrawing. Continue bailing until water is fairly clear or until local regulatory specifications are met. Removal of silt with the bailer will extend the pump life. Contact the Project Manager if water does not clear up by 10 casing volumes.

7) Decon pump by washing in TSP/water the rinsing with tap water and rinsing again with deionized water. Then pump clean water through the pump to push out any dirty water.

8) Purging: Place pump in well about 2 to 5 feet off bottom. Withdraw at least 3 casing volumes from the well, or until temperature, pH and conductivity stabilize (see local regulations). Be careful not to let the pump run dry. Check level with the water level indicator and slow pump down when water level is within 2 ft of the pump head. While purging, collect a water sample as often as possible and check for pH, conductivity, and temperature. Stable pH and conductivity would indicate the well has been filled with representative groundwater and purging is complete. If well recharges slowly, remove 1.5 casing volumes. Estimate flow rates by recording the time it takes to fill a 5-gallon bucket (1/2 of a 55-gallon barrel, etc.)

9) Decon pump thoroughly between each well by repeating step 7.

10) Label bottles with a "Sharpie Pen" when they are dry. Label as W-xx-MWy, where xx is water depth below surface in feet and y is well number (refer to SOP-1).

11) After the well has been developed, sample the water using a disposable bailer and surgical gloves to prevent oil from your hands from contaminating the sample. Be sure to leave no headspace or bubbles in any water sample to be tested for volatiles. Wells should be sampled within (24) hours of purging and the well should have recovered to within 80% of its volume before purging. (Slow recharge wells need to be addressed with the Project Manager - and may have to be purged slowly). Gasoline contaminated water requires 2 x 40 ml VOA's from each well. Preserve samples by acidifying to pH <2 (usually with two drops of HCl). Water suspected of contamination with oil or diesel requires 2 1-liter samples in amber bottles. Samples contaminated with oil will require 10 drops of H_2SO_4 for preservation. Samples for organic lead require 2 1-liter amber bottles.

12) Place like vials in a baggie and label the baggie. Put vials and baggie in an ice chest and document samples and analyses required on a chain of custody. Take samples to the laboratory the same day samples are collected if possible, at least within 24 hours.

13) Clean wellhead gaskets (seals), put locking caps on the wells and replace the covers. Cover and label the drums (if any) of purge and decon water.

Analysis	Bottles	Preservative
8015 mod gasoline/8020(602)	2 x 40 ml VOA	2 drops HCl to pH <2
8015 mod diesel/8020(602)	2 1-liter & 2 x 40 ml VOA	2 drops HCl to pH <2 (applied to VOA's)
418.1 (TRPH)	2 1-liter amber	10 drops H_2SO_4 to pH <2
Organic Lead	2 1-liter amber	no preservative suggested
HOC - 8010 (601)	2 x 40 ml VOA	no preservative suggested

Items Needed:
Water Level Indicator
Bailer
Generator
Grundfos Pump and Reel
Grundfos Pump Control Box
Hydac Cond/Temp/pH Meter
Liter Bottles
VOAs

Distilled Water
3 Buckets
Bottle Brush
TSP Detergent
Stainless Steel Cable or Poly Rope
Cooler with Ice
Socket set and Allen Wrench (CNI Key)
Plastic sheeting

Items Needed for Surveying:
Topcon AT-F7 Transit
Tripod
Stadia Rod

REV. 10/24/97

QUARTERLY WELL MONITORING
SOP-6

QUARTERLY WELL MONITORING

1) Give the site manager advance notification of field activities. Arrange for a sufficient number of drums. Obtain a site plan with the location and ID's of the wells to be monitored and a copy of the table from the last quarterly report with the previous groundwater data.

2) Open well heads. This may require a socket or a special allen wrench.

3) Measure groundwater depths with water level indicator as per SOP-5 before any other action is taken. If the depth to the bottom of the monitoring well is unknown, reel out the water level indicator until you feel the probe contact the bottom. You may have to raise and lower the probe several times to "feel" contact with the bottom. The probe is not very heavy, and the bottom of the well may have a cushioning layer of silt. Record the depth of the well once you feel confident the probe is at the bottom. Note odors from well.

4) Calculate the linear footage of water in each well, by subtracting the depth to water from the total well depth. To obtain the casing volume in gallons, multiply the linear footage by a constant for the given well casing diameter. Typically, three casing volumes are purged from each well prior to sampling. **Always** Round up - if 3.4 gallons, then purge 4 gallons - if 12.1 gallons, then purge 13 gallons.

Casing diameter	Gallons per linear foot
2"	0.17
4"	0.66
6"	1.50
8"	2.60

5) After measuring all water levels, begin purging the wells in order of the cleanest to the most contaminated based on last quarter's data. Well purging procedures are outlined in SOP-5. While wells containing free floating product may not be sampled, the project manager may want the free product removed manually by bailer. Check with the project manager before bailing LPH. You may find that for shallow wells, it may be quicker to bail manually rather than set up the pump. Place purge and decon water in a 55-gallon drum or treat on site. Do not mix purge water from different wells in one drum. Record all purge data on Groundwater Sampling Field Logs. Record "LPH" and the thickness in feet and inches (to nearest 1/16 of an inch) in the comments section if a measurable level of LPH present. If non-measurable amount present then record "Sheen" in the comments section.

6) When the well has recovered at least 80% of its' original water level, collect samples using a clean bailer. Make sure the rope is tied securely on the bailer, you don't want to go fishing. Sample in order of the cleanest to the most contaminated. If required, collect field (equipment) blanks.

7) Trip blanks are a QA/QC procedure that must be collected at every site. Obtain a trip blank from the laboratory. They will make them up for you. The trip blank to taken unopened to the site and is kept with the other samples in the cooler unopened during the day's sampling. Label the bottle as an arbitrary monitoring well. For example: if there are 5 monitoring wells to be sampled at the site, the trip blank should be labeled as if it were a sample from MW6. The trip blank is never opened and it is used to determine if any contaminants are introduced by the laboratory or during transportation of the samples.

8) Field (equipment) blanks are a QA/QC procedure to be collected at the project manager's discretion (or always for LACDPW sites). To collect a field blank decon a bailer thoroughly; pour distilled water into the bailer; pour the distilled water from the bailer into appropriate

sample bottle(s) for the analysis to be performed, allow for no headspace; label the bottle as an arbitrary monitoring well. For example: if there are 5 monitoring wells to be sampled at the site plus a trip blank, and a field blank is to collected, the field blank should be labeled as if it were a sample from MW7 (the trip blank is MW6). If a disposable bailer is used for sampling, use a new disposable bailer to collect the field blank.

9) Label sample containers when they are dry (refer to SOP-1). Place vials from each well in a separate plastic ziplock bag and label the bag. Put bag in an ice chest and document samples and analyses required on a chain of custody (see attached examples).

10) Replace the locking caps, and the covers. Cover and label the drums of waste water. Place the drums on site in a location selected by the site manager. Usually, this will be near a dumpster or in the back, away from public view. Labels should face outward.

11) Decon all equipment before leaving the site.

In general, groundwater sampling will be performed in accordance with LUFT guidelines. Several local agencies require that groundwater sampling occur under slightly different guidelines. Check with the project manager to find out which sites require special groundwater sampling procedures. Typically, the following apply:

Orange County Health Care Agency Requirements

No special requirements. Water sampling will be performed as per the State Water Resources Board's LUFT manual.

LARWQCB Groundwater Requirements

- Purge a minimum of four well volumes if recovery is fast, or one borehole volume if recovery is slow (water does not recover to 80% of original level within two hours).
- The last three readings must be within 10% for conductivity, temperature, and pH to show stabilization. This means that all three consecutive readings must be within these limits - the first with the middle, and the first with the last, and the middle with the last. For instance, pH readings of 6.92, 6.95, and 7.00 would be sufficient.
- Even though there are no guidelines for turbidity, the measurements should be less than 10 NTU, or meet the baseline level established during development, upon completion of purging. Check with project manager if you use the baseline turbidity level.
- Prior to sampling document recovery time by measuring the water level in each well to prove that at least 80% recovery has occurred.
- A trip blank must be collected.
- In the comments column of the chain of custody, write " Prepare laboratory report in WIP format."

San Diego Department of Health
Services Groundwater Sampling Requirements

- SDDHS does not encourage purging wells until dry.
- Purge one borehole volume of water if recovery is fast, collecting pH/temperature/conductivity measurements while purging, then remove an additional one-half borehole volume of water. If the first and second measurements vary by less than 10%, purging is considered adequate. If not,

keep purging water in one-half borehole volume increments until the measurements vary by less than 10%, or three borehole volumes have been removed. Obtain three consecutive pH/temperature/conductivity measurements that are within 10% of each other.

- o If recovery is slow (water does not recover to 80% of original level within two hours) purge only one borehole volume of water.

- o Prior to sampling document recovery time by measuring the water level in each well to prove that at least 80% recovery has occurred.

Ventura County Environmental Health Division
Groundwater Sampling Requirements

- o A trip blank and a duplicate sample must be analyzed for each site.

- o Custody seals must be place over the cap of each sample.

Under certain conditions the calculated purge volumes will need to be calculated in borehole volumes instead of well casings volumes. Use the following to calculate borehole volume in gallons.

Well I.D.	Bore Volume
2"	0.90 gal/ft. in water
4"/or nested wells	1.70 gal/ft. in water

The completed groundwater sampling log must contain:
- pH/temp./conductivity and turbidity measurements indicating stabilization
- time and volume of water removed at each pH/temp./conductivity measurements
- total volume of water purged
- name of personnel performing sampling
- date and project number
- problems or unusual conditions arising during purging or sampling, such as the well going dry during purging, water in the well vault, missing well caps or locks, odors, appearance of purge water, etc.
- 80% recovery measurement and time of measurement after purging and before sampling

All chains of custody for the client's groundwater sites must contain the consultant work release number, station identification number and client contact among the other items to be filled out. Check the groundwater sampling field log and chain of custody for completeness, accuracy and neatness. If you have any questions, call!!!

Make sure that the date and time of relinquished and accepted at the lab are the same on the chain of custody. Also, make sure the lab fills in the sample condition information and signs for the samples on the chain of custody

Santa Barbara County Environmental Health Services
Groundwater Monitoring Guidelines

I. Groundwater Monitoring

A. Groundwater levels are to be monitored/measured in **all wells** in a short timespan.
B. Measure the groundwater levels (correct for "free product" thickness).
C. Use a clear bailer to check for the presence of "floating product," sheen, and odors.
D. Replace well cover until ready to purge well.

II. Purging

A. Amount: generally 3 to 5 (no more than 10) well volumes; via bailer, pumps, or vacuum truck.

B. Parameters (pH, temperature, conductivity) shall stabilize while purging.
1. Measure the parameters of a small volume (i.e., a 500 ml) of the water as it is removed from the well. Measure the parameters initially and at regular volume intervals (e.g., after every well casing volume). More frequent testing may be needed if the well is known to go dry.
2. Wells must be allowed to recharge prior to sampling (see section G of the Santa Barbara County LUFT Manual).

C. Slow recharging wells are wells that are purged dry before removing 3 well volumes of water, and take more than **two (2)** hours to recharge.
1. Note this on the field records and estimate the number of well volumes removed.
2. Allow the well to recharge a minimum of two (2) feet and then sample.
3. **Sample wells no later than 24 hours after purging.**
4. Note the water level and percentage of recharge in the report.

III. Sample Collection

A. Use either a decontaminated teflon, stainless steel, or disposable bailer.

B. Sample containers are to be supplied and certified by a laboratory:
1. VOAs of 40 ml volume (2 per well); fill VOAs first to reduce volatization.
2. 4 oz sample containers for Pb (metallic lead) analysis (if needed).

C. Fill containers by pouring along the inside of the vial to reduce volatilization.

D. Form a positive meniscus with the water, to avoid trapping air, before placing the cap on the VOA. **Samples with headspace are not acceptable for analysis.**
1. Check for bubbles by inverting and tapping gently to dislodge bubbles.
2. If bubbles are found, uncap and repeat steps C and D.

E. Label all samples and store immediately in an ice chest at 4 degrees celsius (blue ice).

F. Be careful to properly decontaminate equipment between each and every well.